



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,302	02/28/2002	Bjorn Heismann	P02,0057	7544
26574	7590	08/26/2004	EXAMINER	
SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473			DINH, TUAN T	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,302

Applicant(s)

HEISMANN ET AL.

Examiner

Tuan T Dinh

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-16 is/are pending in the application.
- 4a) Of the above claim(s) 3, 7-11 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 4-6, 12-14 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The limitations of claims 7-11, and 15 do not read on figure 2 because the figure 2 does not disclose the limitations of "one of the two contacts of each of the photodiodes is respectively connected to the metal and another contact is connected to a conductor track as claimed in claims 7-8, and 15." They would rather show in figure 3, which is a different embodiment of figure 2. Therefore, claims 7-11, and 15 are withdrawn from further consideration as being drawn to non-elected subject matter.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 2, 4, 13-14, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Cohn et al. (U. S. Patent 6,465,882) as in the record.

As to claim 16, Cohn et al. discloses a printed circuit board (PCB) arrangement in figure 5-6 having:

at least a fixed portion (300, see a sketch of Attachment A, the element 300 includes layer 46, 32, 22, 30, 30, 34, 24, and 48) and a movable flexible layer

arrangement (100, see the sketch of Attachment A including elements 30, 20, 34, 24, and 48), in which at least one electrically conductive layer with a multitude of conductor tracks (30, 34, and 36) lying next to one another is accommodated and surrounded by electrically isolating layers (20, 24), the flexible layer arrangement being firmly connected in portions to at least one printed circuit board (200, see the sketch of Attachment A including elements 46, 32, and 22) suitable for accommodating a component (IC chip 75, column 3, line 45) for forming the fixed portion (300), and an opening (cavity 50, column 3, line 18) passing through the circuit board (200) extending as far as the conductor tracks (30) being in the region of the fixed portion to enable contacting the conductor tracks (30) with the component (75), see figure 6.

As to claim 2, Cohn et al. discloses the PCB arrangement in figures 5-6 which has a plurality of electrically conductive layers (30, 34, and 36) being arranged one on top of the other and being separated from one another by electrically isolating layers (20, 24) in the flexible layer arrangement.

As to claim 4, Cohn et al. discloses the PCB arrangement in figures 5-6 wherein the electrically conductive layer (30) situated on a surface of the flexible layer arrangement is formed as a shielding layer (element 30 acts as a ground plane, the ground plane having functions such as ground or shield, column 3, lines 33-35).

As to claims 13-14, Cohn et al. discloses the PCB arrangement in figures 5-6 wherein the opening (50-figure 5), after forming the connection, is filled with a casting compound (see figure 6), and the casting compound is a plastic (column 3, lines 52-53).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohn et al. (U. S. Patent 6,465,882) in view of Haas (U. S. Patent 5,121,297).

As to claim 5, Cohn et al. does disclose all of the limitations of the claimed invention as explained in claim 1, except for the electrically isolating layers are produced from a polyamide.

Haas shows flexible printed circuits as shown in figures 1-2 comprising an insulating core material made of polyamide (column 5, lines 61-62, column 7, line 61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a polyamide material of the insulating core applied in the PCB arrangement of Cohn et al., as taught by Haas, for the purpose of providing a highly tear resistant and enhanced flexibility.

5. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohn et al. (U. S. Patent 6,465,882) in view of Marcovici et al. (U. S. Patent 6,292,529).

As to claims 6 and 12, Cohn et al. does disclose all of the limitations of the claimed invention as explained in claim 1, except for the component, which is a detector module having a multitude of photodiodes.

Marcovici et al. shows a X-ray detector system comprising a detector array including a multitude of photodiodes (14), see column 1, lines 52-67).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a component, which is a detector module having photodiodes in the PCB arrangement, as taught by Marcovici et al, for the purpose of detecting temperatures and converting lights into electrical signals.

Response to Arguments

6. Applicant's arguments filed June 04, 2004 have been fully considered but they are not persuasive.

Applicant argues:

(I) Cohn reference does not teach or suggest "a printed circuit board arrangement having at least a fixed portion and a movable, flexible layer arrangement."

It is incorrect. The Cohn reference clearly discloses in figures 5-6 a printed circuit board (PCB) arrangement having at least a fixed portion (300) and a movable flexible layer arrangement (100). The fixed portion (300) is a main portion of the PCB arrangement, see the attaching paper in figure 5, and the movable flexible layer arrangement (100) comprises flexible layers arranged next to one another and isolated by conductive layer, which is apart of the fixed portion of the PCB arrangement.

(II) Claim 5 is clearly patentable over the combination of Cohn in view of Hass because " there is no teaching or suggestion of forming openings through the rigid board portion to allow forming connections to the flexible portion, such as element 12"

Examiner disagrees. Applicant fails to claim the context provisional of the claim language. Claim 5 does not claim "there is no teaching or suggestion of forming openings through the rigid board portion to allow forming connections to the flexible portion". Claim 5 does recite "the electrically isolating layers are produced from a polyamide." Thus, Hass shows an insulating core in figures 1-2 made by polyamide (see the Office action of portion #4).

(III) Claims 6 and 12 are also patentably distinct and allowable because "Marcovici may show x-ray detector systems comprising a detector array including a large number of photodiodes, it does not teach the deficiencies in Cohn".

Examiner disagrees. Cohn discloses a component (75) (an IC chip). The component does not have a multitude of photodiodes or is a detector module. Marcovici shows an x-ray detector module comprising photodiodes. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a x-ray detector as a component as taught by Marcovici by a component in the arrangement of Cohn for the purpose of detecting temperatures and converting lights into electrical signals.

(IV) If claim 16 is allow then claims 3, 7-11, and 15 are dependent upon allowable independent claim 16. It is correct. If claim 16 is allow then the dependent claims 3, 7-11, and 15 are consider and rejoin, so that claims 3, 7-11, and 15 are dependent upon allowable independent claim 16.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinah whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cunoe can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Dinah
August 16, 2004.



KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800